EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 02064433
PUBLICATION DATE : 05-03-90

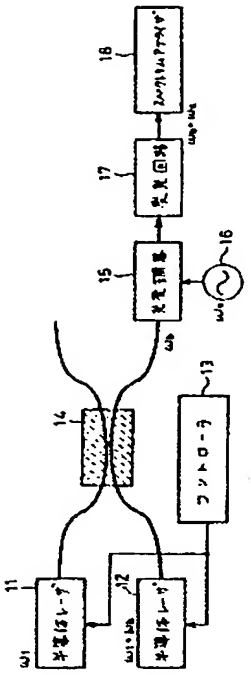
APPLICATION DATE : 31-08-88
APPLICATION NUMBER : 63215083

APPLICANT : NIPPON TELEGR & TELEPH CORP <NTT>;

INVENTOR : SARUWATARI MASATOSHI;

INT.CL. : G01M 11/00 G02F 1/00 G02F 1/313

TITLE : MEASURING METHOD OF FREQUENCY CHARACTERISTIC OF LIGHT MODULATOR AND MEASURING APPARATUS THEREFOR



ABSTRACT : PURPOSE: To conduct accurate measurement over a wide band of 10GHz or above by using for measurement a light beam signal generated from two continuous lights being different in an oscillation light frequency of a semiconductor laser.

CONSTITUTION: First, output lights of two semiconductor lasers 11 and 12 are synthesized by an optical synthesizer 14. On the occasion, each laser oscillation light frequency is controlled by a controller 13 so that a beat frequency ω_b being a difference between the laser oscillation light frequencies be a value approximating to an oscillation frequency ω_s of an oscillator 16 driving a light modulator 15. Said synthesized output light is made to enter the modulator 15. Meanwhile, the modulator 15 modulates the intensity of the light with an electric signal of the frequency ω_s by an output of the oscillator 16. The modulated light is received by a light-receiving circuit 17. The amplitude of a component ω_s-ω_b at the time when the frequency ω_s is varied in succession is proportional to Fm (ω_s) and represents the modulation characteristic of the modulator 15 at the frequency ω_s. Since a squared value of an output photocurrent is measured in a spectrum analyzer 18, measured frequency response is proportional to F^2m (ω) and an Fm (ω) characteristic is determined by the conversion.